RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number:	09/508.6580
Source:	1FW/6.
Date Processed by STIC:	10/3/05

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IFW16

RAW SEQUENCE LISTING DATE: 10/03/2005
PATENT APPLICATION: US/09/508,658C TIME: 13:29:19

Input Set : A:\u012653-9.txt

3 <110> APPLICANT: KROHN, Kai

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HEINO, Maarit
         PETERSON, Part
 5
         SCOTT, Hamish
 6
 7
         ANTONARAKIS, Stylianos
 8
         LALIOTI, Maria D.
 9
         SHIMIZU, Nobuyoshi D.
10
         KUDOH, Jun D.
12 <120> TITLE OF INVENTION: NOVEL GENE DEFECTIVE IN APECED AND ITS USE
14 <130> FILE REFERENCE: u 012653-9
16 <140> CURRENT APPLICATION NUMBER: 09/508,658C
17 <141> CURRENT FILING DATE: 2000-11-03
19 <160> NUMBER OF SEQ ID NOS: 39
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23 <210> SEQ ID NO: 1
24 <211> LENGTH: 2036
25 <212> TYPE: DNA
26 <213> ORGANISM: HOMO SAPIENS
29 <220> FEATURE:
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32 <223> OTHER INFORMATION: /product="AIR-1"
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39 teccegegee cacece atg geg acg gac geg eta ege egg ett etg agg
                                                                         172
40
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41
43 ctg cac cgc acg gag atc gcg gtg gcc gtg gac agc gcc ttc cca ctg
                                                                         220
44 Leu His Arg Thr Glu Ile Ala Val Ala Val Asp Ser Ala Phe Pro Leu
           15
                               20
47 ctg cac gcg ctg gct gac cac gac gtg gtc ccc gag gac aag ttt cag
                                                                         268
48 Leu His Ala Leu Ala Asp His Asp Val Val Pro Glu Asp Lys Phe Gln
49
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51 gag acg ctt cat ctg aag gaa aag gag ggc tgc ccc cag gcc ttc cac
                                                                         316
52 Glu Thr Leu His Leu Lys Glu Lys Glu Gly Cys Pro Gln Ala Phe His
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55 gcc ctc ctg tcc tgg ctg ctg acc cag gac tcc aca gcc atc ctg gac
                                                                         364
56 Ala Leu Leu Ser Trp Leu Leu Thr Gln Asp Ser Thr Ala Ile Leu Asp
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59 ttc tgg agg gtg ctg ttc aag gac tac aac ctg gag cgc tat ggc cgg
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60 Phe Trp Arg Val Leu Phe Lys Asp Tyr Asn Leu Glu Arg Tyr Gly Arg
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Input Set : A:\u012653-9.txt

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65 95 100 105	
67 ccc cgg aag ggg agg aag ccc ccg gcc gtc ccc aag gct ttg gta ccc	
68 Pro Arg Lys Gly Arg Lys Pro Pro Ala Val Pro Lys Ala Leu Val Pro)
69 110 115 120 71 663 666 366 366 366 366 366 366 563 664 663 664	
71 cca ccc aga ctc ccc acc aag agg aag gcc tca gaa gag gct cga gct 72 Pro Pro Arg Leu Pro Thr Lys Arg Lys Ala Ser Glu Glu Ala Arg Ala	
73 125 130 135 146	
75 gcc gcg cca gca gcc ctg act cca agg ggc acc gcc agc cca ggc tct	
76 Ala Ala Pro Ala Ala Leu Thr Pro Arg Gly Thr Ala Ser Pro Gly Ser	
77 145 150 150 155	
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80 Gln Leu Lys Ala Lys Pro Pro Lys Lys Pro Glu Ser Ser Ala Glu Gli	
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84 Gln Arg Leu Pro Leu Gly Asn Gly Ile Gln Thr Met Ser Ala Ser Val	-
85 175 180 185	
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88 Gln Arg Ala Val Ala Met Ser Ser Gly Asp Val Pro Gly Ala Arg Gly	r
89 190 195 200	
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92 Ala Val Glu Gly Ile Leu Ile Gln Gln Val Phe Glu Ser Gly Gly Ser	
93 205 210 215 220	
95 aag aag tgc atc cag gtt ggc ggg gag ttc tac act ccc agc aag ttc	
96 Lys Lys Cys Ile Gln Val Gly Glu Phe Tyr Thr Pro Ser Lys Phe 97 225 230 235	!
99 gaa gac too ggo agt ggg aag aac aag goo ogo ago ago agt ggo oo	r 892
100 Glu Asp Ser Gly Ser Gly Lys Asn Lys Ala Arg Ser Ser Ser Gly Pr	
101 240 245 250	·
103 aag oot otg gtt oga goo aag gga goo oag ggo got goo ooc ggt go	a 940
104 Lys Pro Leu Val Arg Ala Lys Gly Ala Gln Gly Ala Ala Pro Gly Gl	
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111 ctc ccc agt gac ccc cag ctc cac cag aag aat gag gac gag tgt go	
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113 285 290 295 30	
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117 305 310 315	± 1120
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124 Gly Thr Trp Arg Cys Ser Ser Cys Leu Gln Ala Thr Val Gln Glu Va	g 1180 il

Input Set : A:\u012653-9.txt

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	Pro	Leu	Pro	Pro	Gly		Arg	Ser	Ala	Gly	Glu	Glu	Val	Arg	Gly	Pro	
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	Pro	Gly	Glu	Pro		Ala	Gly	Met	Asp		Thr	Leu	Val	Tyr	_	His	
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	Leu	Pro	Ala		Pro	Ser	Ala	Ala		Leu	Pro	Gly	Leu	_	Ser	Ser	
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	Ala	ьeu		Pro	ьeu	ьeu	Cys		GIY	Pro	GIU	GIY		GIN	Asn	ьeu	
145	aat	aat	415	~~~	aat	+~~	~~~	420	+~~	~~~	~~+	~~+	425	~~~	~+~	a+ a	1460
	gct																1468
149	Ala	430	Gry	AIA	Arg	Cys	435	vai	Cys	GIY	Asp	440	1111	Asp	vai	пец	
	cgg		act	cac	tac	acc		acc	ttc	Cac	taa		taa	020	ttc	CC2	1516
	Arg																1316
	445	Cyb		*****	Cyb	450	1114	mu	1110	1115	455	my	Cyb	1115	riic	460	
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	Ala																
157		1			465		1		1	470	3	-7-			475		
	gga	qac	qtq	acc	cca	qcc	cct	qtq	qaq	qqq	ata	ctq	qcc	ccc		ccc	1612
	Gly																
161	•	-		480					485	•				490			
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164	Ala	Arg	Leu	Ala	Pro	Gly	Pro	Ala	Lys	Asp	Asp	Thr	Ala	Ser	His	Glu	
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	Ala	Pro	Pne	Pro													
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196				<u>F</u>	5			5	- 5	10		- 5			15	-	

Input Set : A:\u012653-9.txt

100	Glu	Tla	בות	v-1	λla	T = T	7 cm	Sor	ת דת	Dho	Dro	T 011	T 011	His	71-	T 011
200	Gru	116	AIG	20	AIA	var	Asp	Ser	25	FILE	PIO	Бец	пеп	30	Ala	ьеu
203	Ala	Asp	His	Asp	Val	Val	Pro	Glu	Asp	Lys	Phe	Gln	Glu	Thr	Leu	His
204			35					40					45			
207 208	Leu	Lys 50	Glu	Lys	Glu	Gly	Cys 55	Pro	Gln	Ala	Phe	His 60	Ala	Leu	Leu	Ser
211	Trp	Leu	Leu	Thr	Gln	Asp	Ser	Thr	Ala	Ile	Leu	Asp	Phe	Trp	Arq	Val
212						70					75	-		-	J	80
215	Leu	Phe	Lys	Asp	Tyr	Asn	Leu	Glu	Arg	Tyr	Gly	Arg	Leu	Gln	Pro	Ile
216					85					90					95	
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	Arg	Lys		Pro	Ala	Val	Pro	-	Ala	Leu	Val	Pro		Pro	Arg	Leu
224	Desc	mb	115	7	T	77-	G	120	a 1	77-	3	27.	125	77-	D	
227	PIO	130	ьуѕ	Arg	ьуѕ	Ala	135	GIU	GIU	Ата	Arg	140	Ата	Ala	Pro	Ala
	Δla		Thr	Pro	Δra	Glv		Δla	Ser	Dro	Gl v		Gln	Leu	Larc	λla
	145	пси	1111	110	nr 9	150	1111	AIG	Der		155	DCI	GIII	пец	цуъ	160
		Pro	Pro	Lvs	Lvs		Glu	Ser	Ser			Gln	Gln	Arg	Leu	
236	4				165					170				5	175	
239	Leu	Gly	Asn	Gly	Ile	Gln	Thr	Met	Ser	Ala	Ser	Val	Gln	Arg		Val
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243	Ala	Met	Ser	Ser	Gly	Asp	Val	Pro	Gly	Ala	Arg	Gly	Ala	Val	Glu	Gly
244	_		195					200					205			
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248	~1	210	~ 7	~7	~-	_,	215	_,	_	_	_	220		_	_	
		vaı	GIA	GIY	GIU		Tyr	Thr	Pro	Ser		Phe	GIu	Asp	Ser	
	225	G1 v	Tara	7 an	Tura	230	7 ~~	C.~~		Co~	235	Dwo	T	Pro	T 011	240
256	ser	GIY	гуя	ASII	шув 245	Ala	Arg	ser	ser	250	GIY.	PIO	ьуѕ	PIO	255	vai
	Ara	Ala	Lvs	Glv		Gln	Glv	Ala	Δla		Glv	Glv	Glv	Glu		Ara
260	5		-10	260			017		265		017	O-1	017	270	1114	9
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264		_	275		=			280					285			-
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268		290					295					300				
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272			_	_	_	310	_	_			315					320
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276	~	a	a	G	325	a1		m).		330	~1		~ 1	_	335	
	Cys	ser	ser	_	ьeu	GIN	Ата	Thr		Gin	GIU	vaı	GIn	Pro	Arg	Ата
280	C1	C1.,	Dro	340	Dro	C1 m	~1	Dwa	345	17-1	~1	mh w	Dwa	350	Desa	Desc
284	GIU	GIU	355	Arg	PIO	GIII	GIU	360	PIO	vai	GIU	THE	365	Leu	PIO	PIO
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288	GIY	370	my	Der	пта	GIY	375	GIU	val	Arg	GIA	380	1.TO	GIA	GIU	PIO
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Input Set : A:\u012653-9.txt

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308	_	450					455	Ū	-			460		-			
311	Arg	Pro	Gly	Thr	Gly	Leu	Arg	Cys	Arg	Ser	Cys	Ser	Gly	Asp	Val	Thr	
	465		_		_	470	_	_			475		_	_		480	
315	Pro	Ala	Pro	Val	Glu	Gly	Val	Leu	Ala	Pro	Ser	Pro	Ala	Arg	Leu	Ala	
316					485					490					495		
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327	Leu	Gln	Trp	Ala	Ile	Gln	Ser	Met	Ala	Arg	Pro	Ala	Ala	Pro	Phe	Pro	
328		530					535					540					
331	Ser																
	545																
		0> SI															
		l> LI			545												
		2> T															
		3 > OI			HOM) SAI	PIENS	3									
		0> FI															
342	<22.	1 > N2	ME/I	(H:Y *	CIDS												
	-00	. T				٠.	(100										
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343 345 346 348 350 352 353 354 356 357 358 360 361 362 364	<400 agas ctgs atcc gcas tgg Trp aac Asn	0> SI gaaag ctctc cactg ggtcg ttg Leu cgg Arg	OCATION OF THE PROPERTY OF THE	CON: NCE: aggto ctgg aatgo agaga tac Tyr ttc Phe	(23) 3 cttct gcccg ccatg acctc agt Ser ttc Phe	tcc agge to ccc ct ccc ser	ggctoggtggcatct	ggccgcttcgcctgg	g too g too g cod ect Pro 10 atg Met	gga gga Gly gcc Ala	acg Thr ccg Pro	ctat ggtt ctgt cag Gln ggg Gly	cag Gln ggt Gly 30 att	cag gaa gaa gaa gaa gaa gaa gaa gaa gaa	gaggt gggtt gca Ala tgt Cys	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser	120 180 239 287
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343 345 346 348 350 352 353 354 356 361 362 364 365 366	<400 agas ctgs atcc gcas tgg Trp aac Asn aga Arg	D> SI gaaag ctctc cactc ggtcg ttg Leu cgg Arg cca Pro 35	gtg gtg gtg ggg ggg gtg Val gtt Val gat Asp	tac Tyr ttc Phe	(237) 3 ettet gecegecate accte agt Ser ttc Phe tgg	tcc agge to tcc ct tcc ser cca Pro	ggctoggtggcatctcgggg	ggccgcttcgcctgg gcc Ala ggg ggg gly 25 ggt Gly	cct Pro 10 atg Met ggt	gga gga Gly gcc Ala cag	acg Thr ccg Pro	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45	cag Gln ggt Gly 30 att	cag of tall tall tall tall tall ser	gaggt gggtt gca Ala tgt Cys ggc Gly	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro	120 180 239 287 335
343 345 346 348 350 352 353 354 356 361 362 364 365 366 368	tgg Trp aac Asn aga Arg	ttg Leu cgg Arg cca Pro agc agc	CCATION OF THE PROPERTY OF THE	tac Tyr ttc pga gga gga	(237) 3 ettet gecegecate accte agt Ser ttc Phe tgg Trp gca	tcc agge to tcc ct tcc Ser cca Pro	ggctoggtgg catch cgggo Gly ata Ile aca Thr 40 cag	gcc gcctgg gcc Ala ggg Gly 25 ggt Gly aga	cct Pro 10 atg Met ggt Gly	gga Gly gcc Ala cag Gln	acg Thr ccg Pro	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca	cag Gln ggt Gly 30 att Ile	cct Pro 15 gtc Val tca Ser	gaggt gggtt gca Ala tgt Cys ggc Gly	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro	120 180 239 287 335
343 345 346 348 350 352 353 354 356 361 362 364 365 366 368	tgg Trp aac Asn aga Arg	D> SI gaaag ctctc cactc ggtcg ttg Leu cgg Arg cca Pro 35	CCATION OF THE PROPERTY OF THE	tac Tyr ttc pga gga gga	(237) 3 ettet gecegecate accte agt Ser ttc Phe tgg Trp gca	tcc agge to tcc ct tcc Ser cca Pro	ggctoggtgg catch cgggo Gly ata Ile aca Thr 40 cag	gcc gcctgg gcc Ala ggg Gly 25 ggt Gly aga	cct Pro 10 atg Met ggt Gly	gga Gly gcc Ala cag Gln	acg Thr ccg Pro	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca	cag Gln ggt Gly 30 att Ile	cct Pro 15 gtc Val tca Ser	gaggt gggtt gca Ala tgt Cys ggc Gly	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro	120 180 239 287 335
343 345 348 350 352 353 354 356 361 362 364 365 368 369 370	tgg Trp aac Asn aga Arg	ttg Leu cgg Arg cca Pro 35 agc Ser	OCATION OF THE PROPERTY OF THE	tac Tyr ttc Phe gga Gly	(237) 3 ettet gecegecate accte agt Ser ttc Phe tgg Trp gca Ala	tcc aggregation tcc ser cca Pro gga Gly 55	ggctoggtggggggggggggggggggggggggggggggg	ggcc gcctgg gcc Ala ggg Gly 25 ggt Gly aga Arg	cct Pro 10 atg Met ggt ctg Leu	gga Gly gcc Ala cag Gln ggg Gly	acg Thr ccg Pro ggc Gly agt ser	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca Ser	cag Gln ggt Gly 30 att Ile	cct Pro 15 gtc Val tca Ser acc	gaggt gggtt gca Ala tgt Cys ggc Gly cag	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro aga Arg 65	120 180 239 287 335
343 345 348 350 352 353 354 356 361 362 364 365 368 369 370 372	tgg Trp aac Asn aga Arg ggc Gly 50	ttg Leu cgg Arg cca Pro agc agc	CCATION OF THE PROPERTY OF THE	tac Tyr ttc Phe gga Gly	(237) 3 ettet gecege ceate accte agt Ser ttc Phe tgg Trp gca Ala agc	tcc aggregated tcc ser cca Pro gga Gly 55 tgt	ggctoggtgg ggggggggggggggggggggggggggggg	ggccgcttcgcctgg gcc Ala ggg Gly 25 ggt Gly aga Arg	cct Pro 10 atg Met ggt ctg Leu	gga Gly gcc Ala cag Gln ggg Gly	acg Thr ccg Pro ggc Gly agt ser 60 gtg	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca Ser	cag Gln ggt Gly 30 att Ile ggt Gly	cct Pro 15 gtc Val tca Ser acc Thr	gca Ala tgt Cys ggc Gly cag Gln	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro aga Arg 65 gtg	120 180 239 287 335 383
343 345 348 350 352 353 354 356 361 362 364 365 368 369 370 372	tgg Trp aac Asn aga Arg ggc Gly 50	ttg Leu cgg Arg cca Pro 35 agc ser	CCATION OF THE PROPERTY OF THE	tac Tyr ttc Phe gga Gly	(237) 3 ettet gecege ceate accte agt Ser ttc Phe tgg Trp gca Ala agc	tcc aggregated tcc ser cca Pro gga Gly 55 tgt	ggctoggtgg ggggggggggggggggggggggggggggg	ggccgcttcgcctgg gcc Ala ggg Gly 25 ggt Gly aga Arg	cct Pro 10 atg Met ggt ctg Leu	gga Gly gcc Ala cag Gln ggg Gly	acg Thr ccg Pro ggc Gly agt ser 60 gtg	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca Ser	cag Gln ggt Gly 30 att Ile ggt Gly	cct Pro 15 gtc Val tca Ser acc Thr	gca Ala tgt Cys ggc Gly cag Gln	ccaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro aga Arg 65 gtg	120 180 239 287 335 383
343 345 348 350 352 353 354 356 357 358 361 362 364 365 368 370 372 373	tgg Trp aac Asn aga Arg ggc Gly 50 tgc Cys	ttg Leu cgg Arg cca Pro 35 agc ser	CCATION OF THE PROPERTY OF THE	tac Tyr ttc Phe gga Gly ggg Gly	(23°) 3 cttct gccccc acctc agt Ser ttc Phe tgg Trp gca Ala agc Ser 70	tcc aggregated tcc ser cca Pro gga Gly 55 tgt Cys	ggctoggtgg gggg Gly ata Ile aca Thr 40 cag Gln ttt	gcc Ala ggg Gly aga Arg ggg Gly	cct Pro 10 atg Met ggt ctg Leu aag Lys	gga gga Gly gcc Ala cag Gln ggg Gly gag Glu 75	acg Thr ccg Pro ggc Gly agt Ser 60 gtg Val	ctat ggtt ctgt cag Gln ggg Gly aga Arg 45 tca Ser gct Ala	cag Gln ggt Gly 30 att Ile ggt Ctc Leu	cct Pro 15 gtc Val tca Ser acc Thr agg Arg	gca Ala tgt Cys ggc Gly cag Gln agg Arg	tcaagg gtagaa cc atg Met 1 aga Arg tcg Ser cct Pro aga Arg 65 gtg Val	120 180 239 287 335 383

Input Set : A:\u012653-9.txt

Output Set: N:\CRF4\10032005\I508658C.raw

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31 Seq#:32,33,34,35 VERIFICATION SUMMARYDATE: 10/03/2005PATENT APPLICATION: US/09/508,658CTIME: 13:29:20

Input Set : A:\u012653-9.txt